

Appl. Serial No. 09/332,212  
Docket No.: PHN 16,982  
Office Action Response

### Remarks

Favorable reconsideration of this application is requested in view of the following remarks. For the reasons set forth below, Applicant respectfully submits that the claimed invention is allowable over the cited references.

The Office Action mailed May 6, 2003, indicated that claims 12-18 are objected to but would be allowable if rewritten in independent form including all of the limitations of their respective base and any intervening claims; claims 2-3 and 8 stand rejected under 35 U.S.C. § 112(2); claims 1, 6 and 9 stand rejected under 35 U.S.C. § 102(b) in view of *Nakamura et al.* (U.S. Pat. No. 4,952,787); claims 2-3 stand rejected under 35 U.S.C. § 103(a) over *Nakamura* in view of *Hoshi et al.* (U.S. Pat. No. 4,733,065); claims 4-5 stand rejected under 35 U.S.C. § 103(a) over *Nakamura* in view of *Hoshi et al.* and further in view of *Kuramochi et al.* (U.S. Pat. No. 5,008,552); claims 7 and 10 stand rejected under 35 U.S.C. § 103(a) over *Nakamura* in view of *Sato et al.* (U.S. Pat. No. 5,617,389); and claim 8 stands rejected under 35 U.S.C. § 103(a) over *Nakamura* in view of *Sato et al.* and further in view of *Hoshi et al.*

Applicant appreciates the Examiner's indication of allowability of claims 12-18 upon their rewriting in independent form. However, based on the discussion below in connection with independent claim 1, from which claims 12-18 depend, Applicant submits that this rewriting is not necessary for the allowance of the claims.

Applicant respectfully traverses the Section 112 (2) rejection because each of claims 2, 3 and 8 have distinct limitations that have clear support in the Specification such that one of skill in the art would reasonably ascertain the subject matter to which the claims are directed. The mathematical terms themselves are, by definition provided in the claims, directly corresponding to the mathematical terms used in the Specification. For example, claim 2 defines the objected-to term as follows: "t(n-m) is the time difference between detector signals of sub-detectors m and n". This definition, and those provided in claims 3 and 8, are consistent with the terms used at pages 6-7 of the Specification. For instance, "n" and "m" are representative of sub-detectors and as such are applicable to the equation "t(a-b)" (with "a" corresponding to "n" and "b" corresponding to "m"), such that "t(a-b)" is the

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time difference between detector signals of sub-detectors "a" and "b." Similarly, "t(c-d)" is the time difference between detector signals of sub-detectors "c" and "d." The Board has considered such antecedent-basis rejections/objections in other cases and has held that a claim satisfies the requirements if it would be reasonably ascertainable by those skilled in the art. As explained in the M.P.E.P., with respect to either the claims or the disclosure, lack of word-for-word antecedent basis does not always render a claim indefinite. See, e.g., M.P.E.P. § 2173.05(e). One of skill in the art would recognize that the representative use of "n" and "m" in the term "t(n-m)" as referring to representative terms for "n" and "m," and in this instance, to sub-detectors a, b, c and d. Therefore, the subject claims satisfy the Section 112(2) requirements and the rejection should be removed.

Applicant respectfully traverses the Section 102(b) rejection of claims 1, 6 and 9 because the '787 reference does not teach or suggest all of the claimed limitations. For example, the cited portion of the '787 reference including column 12, line 65 to column 13, line 40 does not teach or suggest limitations directed to "forming a time difference between corresponding parts of the detector signals." The '787 reference does not apparently detect such a time difference because the outputs of different detectors are added, with the result used as a total reflection amount. See, e.g., column 13, lines 1-10. The only mention to time whatsoever is directed to the time between pits being scanned. Regarding the limitations directed to a wavefront aberration (or deviation) formed from the time difference, the focus error the Examiner is apparently referring to appears related to a difference in the amount of light detected, and does not mention timing differences in detected light. See, e.g., column 13, lines 1-5. In addition, none of these cited portions of the '787 reference correspond to the claimed limitations related to time difference relative to the passage of a radiation beam over a single mark. Without complete correspondence to these limitations, the requirements for establishing a *prima facie* Section 102(b) rejection are not met and the rejection must therefore be removed.

Applicant respectfully traverses all of the Section 103(a) rejections, each of which relies upon the '787 reference as a primary reference, because the Office Action failed to

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establish a *prima facie* case under 35 U.S.C. § 103(a). To establish a *prima facie* case under 35 U.S.C. § 103(a), three basic criteria must be met, as indicated in the M.P.E.P. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. In this instance, the Office Action failed to meet all of the criteria for establishing such a Section 103(a) rejection, as discussed below.

Applicant respectfully submits that not one of the Section 103(a) rejections, all of which depend upon the '787 reference as the primary reference, meets all three criteria for establishing a *prima facie* case under 35 U.S.C. § 103(a). In addition to the above-stated deficiencies in the '787 reference, further improprieties of selected ones of the Section 103 rejections are discussed below.

With respect to the Section 103(a) rejection of independent claims 7 and 10, the Office Action acknowledges on page 5 that the '787 reference does not teach a divided detector consisting of four quadrants and eight cells. In an attempt to address this deficiency, the Office Action relies upon the teachings of the '389 reference and attempts to combine these teachings with the detection system of the '787 reference, using as alleged motivation "accurately detecting reflected light resulting from changes in spacing between the recording surface and the optical head." However, the Office Action failed to show any evidence of how the '787 reference would be susceptible to such a change in spacing, and correspondingly that one of skill in the art would be motivated to address issues related to a change in spacing. Therefore, the first criterion for establishing a Section 103(a) rejection has not been met.

Applicant respectfully submits that the Section 103(a) rejection of claims 2 and 3 should be removed because the Office Action failed to cite teaching of all the claimed limitations and evidence of motivation for modifying the primary '787 reference. The Office Action acknowledges, on page 3, that the '787 reference fails to teach limitations

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directed to using a difference between signals to determine wavefront aberration. In an attempt to overcome this deficiency, the Office Action purports to add the cited teachings of the '065 reference. However, this asserted combination makes no reference of the detection of a time difference between signals. As discussed above in connection with the Section 102 rejection, the difference that the '787 reference appears to be directed to is a difference in the amount of light. Here, the Office Action again appears to be confusing the timing difference with a difference in amount of reflected light, as the cited portion of the '065 reference appears to be directed to "the use of intensity signals" as cited on page 3 of the Office Action. Such detection of "intensity" (*i.e.*, an amount of light) in the '065 reference fails to teach or suggest the limitations directed to the detection of a time difference between sub-detectors. Therefore, the asserted combination of the '065 reference with the '787 reference further fails to meet the third criterion for establishing a *prima facie* case under 35 U.S.C. § 103(a). Moreover, the asserted motivation on pages 3 and 4 of the Office Action is speculative and unsupported by any evidence from the prior art, thus failing to meet the first criterion for establishing a *prima facie* case under 35 U.S.C. § 103(a).

The Section 103(a) rejection of claims 4-5 should fail for the reasons stated above in connection with the Section 102 rejection and also in connection with the improper combination of the '065 reference with the '787 reference. However, Applicant further submits that the rejection is improper because the Office Action failed to show where the cited references teach the limitations directed to detectors arranged at both sides of a dividing line extending perpendicular to a scan line. The cited portion of the '552 reference, cited in alleged support of a showing of these limitations, fails to even mention a dividing line. Therefore, the third criterion for establishing a *prima facie* Section 103(a) rejection has not been met. Moreover, the alleged motivation (p. 4 of Office Action) regarding "multiple wavefront aberrations" and "wobbling" is speculative and unsupported by any evidence from the prior art. Specifically, it is unclear how the '787 reference would be susceptible to these alleged "problems" and otherwise benefit from the teachings of the '552 reference. Therefore, the Section 103(a) rejection of claims 4-5

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also fails to meet the first criterion for establishing a *prima facie* case under 35 U.S.C. § 103(a).

The Section 103(a) rejection of claim 8 should be reversed for the reasons discussed above in connection with the rejection of claim 7, from which claim 8 depends. Applicant submits that the rejection should also be removed because the asserted portions of the '065 reference also fail to teach limitations directed to the detection of a time difference in signals. For example, as acknowledged on page 5 of the Office Action, the combination of the '389 reference with the '787 reference fails to teach or suggest limitations directed to the use of four or more sub-detectors. In an attempt to arrive at the claimed limitations, the Office Action purports that the "use of intensity signals from four or more sub-detectors" in the '065 reference meet this deficiency. Applicant again submits that such an intensity detection approach fails to teach or suggest detecting a time difference in signals, and therefore the rejection fails to meet the third criterion for establishing a *prima facie* case under 35 U.S.C. § 103(a). Moreover, the asserted motivation on page 5 of the Office Action is speculative and unsupported by any evidence from the prior art, thus failing to meet the first criterion for establishing a *prima facie* case under 35 U.S.C. § 103(a).

In addition to the above, Applicant further submits that the Examiner has presented substantially the same rejections (as in the prior two Office Actions) without providing a substantive response to the issues previously raised by Applicant. For example, the Response to Arguments section ignores much of Applicant's previous Office Action response filed on February 25, 2003, directed to the lack of teaching of various limitations as well as motivation for making asserted combinations, as previously discussed. In view of the lack of substantive response, Applicant submits that the Office Action does not comply with, among other requirements, M.P.E.P. § 707.07(f) and 35 U.S.C. § 132, in that it has not afforded the Applicant an opportunity to adequately form a response to any rationale behind the traversed rejections. Should any of the §§ 102 and 103(a) rejections be maintained, Applicant requests that the Examiner answer the substance of Applicant's traversals discussed herein.

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In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the attorney overseeing the application file, Mr. Eric M. Bram, of Philips Corporation at (914) 333-9635.

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